

THE ASPECTS OF IMPLEMENTING A LEGAL LAND CADASTRE
IN THE REPUBLIC OF ARMENIA

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I. INTRODUCTION AND BACKGROUND

This report is the result of a one month TDY trip to the Republic of Armenia where Walter G. Robillard was asked to continue the work from previous trips by Lynn Holstein in 1993. This should be considered as a supplement to and an extension of the earlier evaluation.

This Consultant elaborated on some of the same subject matter Holstein addressed, but he also included new areas which he believed were important to a cadastral system and its implementation.

The writer had the opportunity to overlap his trip and examination with Richard Almy who examined and commented on the fiscal cadastre of Armenia. The focus of this report will be on the legal cadastre and a proposed multi-purpose cadastre for the country.

The focus will consider concrete suggestions to implement the fiscal and legal cadastre within the Republic of Armenia. These recommendations are based on personal visits to various government offices and villages, discussions and comments from various agencies and ministries plus examination of several individual reports that were prepared and presented for consideration.

The remaining time was dedicated to making a more in depth examination and subject specific examination of aspects that were identified as being necessary to his specific tasks.

The Republic of Armenia is attempting to identify and to install a cadastral system for identification of all of its lands and for taxation purposes, in what they call "privatization", the granting of parcels now in Government ownership and for subsequent transfer of parcels between private persons.

The concept of a cadastral system has the potential

of becoming a major function for the Armenian government. Presently the government agencies now involved in privatizing lands are the Minister of Agriculture and various city authorities. There is no one agency responsible, but several governmental agencies seem to give direction and several governmental ministers, Deputy Ministers and employees have an excellent understanding of what is wanted in a cadastre. As a result of this, there seems to be some hidden "in fighting" or positioning for responsibilities and authority that was observed. The UN/FAO report dated

June, 1994 on The Completion of Land Reform in Armenia recommended full authority for the cadastre be designated to the Department of Agriculture. (Annex 1) Holstein recommended a separate independent agency be created, yet neither recognized that an on going cadastral program was present, with no coordination among the agencies. To initiate a separate agency at this time could possibly set the programs back a significant period of time.

Walter G. Robillard, a registered surveyor, forester, attorney, educator and author on land and boundaries, real property and related matters commenced his visit on 20 July 1994 and terminated on 18 August 1994. The first two weeks concentrated on visiting the various agencies responsible for cadastre records, surveys and the various aspects of land parcelization. This time span overlapped with Richard Almy who was concentrating on the fiscal cadastre. This writer may seem at odds or in contradiction with recommendations or statements made by previous consultants, Almy and Holstein, but he would like to point out that HE IS NOT a specialist in tax matters nor a theorist, but his specialty lies in the areas of land descriptions, titles, mapping, boundaries, boundary disputes, and survey matters relative to land. The consultant has worked in these areas for over 40 years and served as an expert witness in numerous court litigation in the same areas as a 30 year employee and regional surveyor for the United States Forest Service. He address the technical legal cadastre as it relates to these areas and the legal and multi-purpose cadastre. Although by

necessity, the focus of this report and the investigation is directed with the urban approach in mind, by necessity some aspects of the rural areas must be addressed because the same philosophy and methods will apply to both. If methods can be perfected in the rural areas, where the parcels are less concentrated, then when once perfected they can be adopted and adapted for the urban areas.

The author was also privileged to review cadastral reports prepared by a United Nations team that visited Armenia. The latest report titled Agricultural Reform Support Project, Annex 2, Completion of Land Reform, undated.

Comments will be made about this report and will be incorporated in my comments.

II. PRELUDE TO THE REPORT

A. HISTORY

Under the Soviet authorities all land was deemed and considered to be in the absolute ownership of the State. The people of Armenia have lived under this concept for nearly five generations. Few individuals alive today remember land ownership prior to the Soviet era. The concept of state ownership formed the framework for the entire present land system of Armenia.

In the rural areas land was classified and divided by producing capacity into large collectives or state farms. It was these estates that made up basic units for the rural land use. On each collective estate spatial sub-units were allocated for public or private housing or gardening, with private ownership of buildings being permitted.

Originally maps were prepared showing soil classification and general topography and planimetric features. All information as to coordinates were

considered classified information and were held in secret. In some areas aerial photographs and photomosaics were available, but the poor quality and the questionable scale precluded their effective use. It is my understanding that the maps and aerial photographs were restricted in their distribution.

Rural villages were usually controlled by a peoples council. Apparently there were no requirements for belonging to these councils. It was apparent that all lands are being classified according to criteria that had been established many years ago to meet the needs of the distribution under the Soviet direction. This classification is too basic to be applied to the needs of today's land classification needs.

A visit to field surveying parties was most helpful in being able to understand reasons why the preparation of the final State Acts (deeds, Certificates of Title) was delayed in most villages and other areas. Whereas nearly 90% of the rural and village parcelizations have been granted, the final documents are being delayed because of surveys not being completed. Presently it is estimated that the field survey crews are now five years behind the office documentation and final deed preparations. The field crews are using inefficient surveying and outdated equipment, simply because no better was available at the time the work started. They used what equipment and knowledge they had. Apparently no formalized or unified training cadastral training has been given to these field crews. In the conduct of their work the crews were using plane table methods that produced only linear measurements and no angular measurements.

In addition, field crews conducting the field surveys in the rural and the urban areas are failing to place adequate property monuments for the identification of the surveyed parcels. This failure was highlighted by the United Nations in their Aide Memoire. Annex 3. P.3 (6).

No instructions or directions were given explaining the necessity of placing monuments at the property corners being surveyed and identified. This practice was

universal in both the rural areas and in the cities and villages. This failure should be considered serious and should be corrected. This was addressed by the United Nations' reports as a major deficiency or set back in implementing a sound cadastral system. It is possible this failure will cause serious legal problems in the future. If what has been done in other societies

can be considered as a prelude to the Republic of Armenia's problems, the failure to adequately identify and monument the created corners will possibly cause serious boundary problems in the future and will certainly lead to disputes and conflagrations between neighbors and there always exists the possibility of future litigation.

All surveyors working in the cadastre originally worked in a system that did not recognize individual property rights and as such the survey professionals are limited in their understanding as to the basic requirements the adequate and legal documentation for cadastral survey information.

Records of the land possession and new assignments are maintained on topographic maps at the scale of 1:5,000 or 1:2,000 and larger. These maps are difficult to use and to reproduce because they have been drafted on what is referred to in the profession as "metal mounts", that is the maps is actually drafted on a paper surface that has been glued to a rigid aluminum sheet for stability.

During the era of Russian influence, in the cities and towns the State delegated the right to distribute land with the ultimate right to use this land to the municipalities. The municipalities were then granted the right to allocate the land through a land use cadastre. The allocation of a lot carried with it the right to usually construct a house which would permit inheritance and the right to sell or donate the house, separate from the land. The right to the land use was separate from the use of the house or building. Written records were maintained in the city and maps at a scale of 1:2,000 or greater were kept as part of this official record.

From the initial stirrings of glasnost and perestroika in the 1980's to the ultimate collapse of the Soviet system in the early 1990's the entrance of the former soviet bloc, including Armenia, into the principles of democracy and the resulting principles of land ownership, the peoples of these former Soviet nations are having to learn the formerly unknown responsibilities and authorities that go with the private ownership of land. With the collapse of the Soviet, the privatization of land was high on the agenda of most eastern governments, including Armenia. With the desire to privatize the former communal lands (commonly owned) as quickly as possible, little thought was given to the necessary requirements and the processes needed to make the desired privatization work.

It should be noted that prior to the collapse of the Soviet system, there existed in Russia a thriving market for buildings, especially dachas, and as such the ownership of the buildings and the possession of the land was registered in the name of a person and not the location of the property. This concept has been an important factor in recent developments relative to the privatization of lands in the Republic today.

The private ownership of land with the associated rights and responsibilities with this ownership have been understood and accepted in the Western nations for centuries, but the former Soviet republics have had no background experience on which to build a "land ethic" necessary to create and implement a cadastre. To quickly they attempted to adopt some of the Western approaches. Yet, understandably, they were influenced by and have retained some of the former beliefs associated with communal ownership.

With the collapse of the Soviet land system, the newly emerging democracies, including Armenia, went pell mell into privatizing land for private ownership without adequate planning or thoughts. They hoped to get as much land into private ownership as soon as possible. They fully realized land is a basic economic resource for their country. One of the major strengths of the Eastern approach to a scientific culture is now coming into conflict with the Western approach of

general land boundary and land title principles that have for centuries been accepted principles by landowners.

Early in the process changes must be addressed by the government, by the citizens and the involved professionals, such as surveyors and realtors.

B. PRESENT STATUS

Many of the former Soviet states, including the Republic of Armenia, are now having problems in the privatization of former communal lands. Some of these are:

1. Difficulty in understanding the concept of land ownership and rights of retained government lands and those privatized lands.
2. Difficulty in drafting suitable legislation to meet the requirements of private ownership.
3. Difficulty in considering all land records as public records and how these records should be indexed and retained for future use for taxation and other purposes.
4. Difficulty in realizing that a proper cadastral survey includes more than just depicting that parcel or parcels on a map and creating a description. It also includes creating bearing of the lines and the setting of adequate property monuments.

III. SCOPE OF WORK

This consultant was provided with a scope of work prior to his departure from the United States. The scope was discussed with Steve Anlian and Richard Almy. To make certain that no overlaps were present or that no gaps occurred, it was slightly modified at the project site.

After analysis of the total project the following areas were examined and will be addressed in this report. These are identified as Tasks in this report.

1. Current Status
 - a. Present Basic Plan & Options.
 - b. Universal Indexing System for the country.
 - c. Requirements & Options for Legal Cadastre.
2. Legal framework for implementing a cadastre.
 - a. Civil code.
 - b. Contract code.
 - c. 1991 Land Code.
 - d. Proposed Land Code.
3. Requirements & Options for Land Registration.
 - a. Adequacy of basic forms for privatization.
 - b. Procedures for registration.
 1. Numbers.
 2. Timetable.
 3. Access to records.
4. Registration of secondary transactions.

5. Information storage and retrieval.
 - a. Ease of use.
 - b. Fees.
 - c. Computerization of records.
6. Suggestions for universal indexing system.
 - a. Fiscal
 - b. Legal
 - c. Multi-purpose cadastre.
7. Conditions of the present cadastral system.
 - a. What is being used.
 - b. How the data will be used.
 - c. Map standardization.
8. Develop a Legal cadastre.
 - a. Sporadic v. systematic.
 - b. For an illustrative city examine
 1. Base maps.
 2. Surveyors available to do the job.
 - a. Training & costs.
 3. Expected difficulties for urban boundaries.
 4. Cartographic capabilities & costs for obtaining cartographic information.

Although the primary thrust of this study is directed towards urban and city parcels that compose the legal and fiscal cadastre, yet these cannot be separated from the rural farm parcels. All areas will be discussed, but with the emphasis directed to the urban and city areas.

IV. IMPLEMENTATION OF THE CADASTRE

A. THE THREE CADASTRES

The Three Cadastres were adequately described by Holstein. In his report, in which he went on to discuss the legal cadastre. This author accepts the definition and approached his task with that in mind. 2

This consultant emphasizes that the basis of all cadastres is a sound and identifiable legal cadastre. If the legal cadastre is one based on adequate and sufficient legal descriptions, the other cadastres (tax cadastre and multi-purpose) can then be implemented and all privatized parcels of land can be identified.

The four elements of a legal cadastre are worthy of repeating. These elements were part of the scope of work this detailer was directed to examine and comment on.

- (1) records of the identification of the objects of immovable property rights as well as of the owners or holders of the rights and interests in the immovable property, both state and private.
- (2). cadastral maps and plans of the immovable properties, the result of cadastral surveying;
- (3). an efficient system of immovable property transfer, exchange, or buying and selling... .
- (4). an information management policy that ensures that the information in a legal cadastre is available for public use to ensure: (a) public notice of rights is available, (b) equity in the landmarket, a (c) efficiency in the wider function of land administration, especially the fiscal cadastre and property tax, housing, planning, and urban and rural management.

As a detailer the scope of my proposed work or study was to augment the work of Richard Almy and to expand and to supplement the prior work of Lynn Holstein.

V. RECOMMENDATIONS OF TASK COMPLETION

In the Scope of Work provided the detailer, five (5) specific tasks were identified for examination and recommendations. These five areas are discussed.

A. DISCUSSIONS OF THE TASKS

1. TASK 1.

In task 1, three recommendations were requested.

- a. defining options and a basic game plan for establishing a market oriented registration function.
- b. establishing a consistent property location indexing system among all agencies maintaining cadastral information.
- c. options and basic requirements for undertaking compilation of the legal cadastre over time.

In visiting the various agencies and the villages the detailer was able to make personal observations as to the present status of a market oriented cadastre system. It was found that many of the individuals who have received privatized lands failed to properly record the parcels, this inhibited registration for future sales and for the fiscal (tax) cadastre. Although it is important for the tax cadastre to rely on a specific description. It is not so important that the description with all of its elements, bearings, distances, and references, be recited in the tax cadastre or tax inventory office. The important element needed is; the parcel and its recorded (legal) owner be identified to the specific parcel. Many nations rely on Tax Maps to accomplish this function. United with a computer indexing system, the surveyed tax parcels are drafted on a stable (plastic) material. All descriptions of each parcel are identified by number, with the parcel owner's name identified in the computer system by its unique number. The base material on which the parcels are identified or plotted can either be a cadastral map prepared by the surveyors or on an aerial photography, with the map of the planimetric features placed on the photograph. It is not recommended that paper base materials be used for these tax maps or for the original map bases. The paper will disintegrate with extensive use and over a period of time. Annex 4 and 5.

Annex 4 depicts a portion of an actual Tax Map from the State of South Carolina. Note the basic plan is only to identify parcels of land by parcel number in relation to the overall picture. All other information about each parcel is on a data base in the computer. A person can access the computer by parcel number, then the owner, tax value, taxes paid, etc. is retrieved from the data base. The records are maintained by the Government. All records must be considered for public use and any member of the public must have ready access for reference to any of the public records. Although Annex 4 is on a paper material, the actual map is on the type of material depicted in Annex 5.

Annex 5 is an aerial photographic mosaic (orthophoto map) that can be produced using aerial photographs and existing maps. The maps are photographed on the aerial photographic images. This makes an excellent base material for keeping original records and for making available to other Government agencies, villages and other users. The original maps can be updated very easily with reasonable costs. New parcelizations can be placed on the material by hand drafting. Periodic updating of the maps is accomplished by computer aided drafting, when a new base map is produced.

Immediate steps must be taken to stress the importance of having each land owner register each parcel. There is a great hesitancy in their doing this.

Indexing the nearly 1.5 million parcels that will be developed in the rural, urban and city areas will task the various agencies. In most areas at this time parcels are being indexed by the name of the grantor or the person receiving the land. This policy is in keeping with the practice inherited from the former Russian authorities. This type of indexing is the least favorable for a land system registration. The concept is "Land owners may change but land descriptions should not." After studying the problem, the detailer recommends a system based on a modification of that recommended in a report title The Concept of the Republic of Armenia's Urban Land cadastre authored by Gourgen Moushegian and Petros Soghomonian. Annex 6,

page 16. The two authors prepared an excellent and in-depth report in early 1994 which addressed the indexing system for urban lands. I agree with the system that was proposed. It has merit and can be adopted and adapted as an indexing system using existing maps. This system provides for urban indexing but the present rural indexing is primarily based on grantee names.

Unless maps are readily available for reference from the rural villages to the City of Yerevan, the indexing system cannot be effectively initiated and utilized.

At the time of the detailer's visit, three separate agencies were actively involved in cadastral activities. Each had separate responsibilities for the cadastre in Armenia. These agencies are the Inventory Bureau of the City of Yerevan which handles the properties located within the boundaries of the City of Yerevan; Armgiprozem which directs the rural lands; and the Communal Services Ministry, Inventory Department, which has responsibilities for other lands.

B. TASK 1 LONG TERM RECOMMENDATIONS

Task 1 recommendations are made with the realization in mind that little or no additional funding is immediately available at the present time to enact any new programs or to finance new agencies. These recommendations are made with the hope that sufficient funding will eventually become available through direct appropriations and/or foreign grants or loans.

Several recommendations are reluctantly made, knowing full well that they are not what this consultant would consider as the final recommended approach, but they are made in order to keep the present cadastral program active and growing.

Later in this report, a listing of short-term recommendations will be identified, in hopes that the momentum that has been generated will continue.

(a). It is recommended that regulations be formulated or the Republic enact specific laws to make registration mandatory. This could be accomplished by making the cost of the initial registration very reasonable for a period of time up to one month after

the privatization, State Acts, or Certificates of Title are delivered. Up to six months after delivery a greater fee be demanded, but if the owner fails to register the parcel after six months it should be revert back to the Republic of Armenia.

At the present time many of the landowners are refusing to register their newly acquired lands. The major reason given is they are being presented with Preliminary (temporary) Certificates of Title. They falsely believe that until the final Certificates of Title are delivered they are not the legal owners of the land. This is not true. With the delay in surveys and the completion of the final title it will be several years before some of the landowners will ever receive final titles to their properties. The landowners must be instructed and become convinced their titles are good and they are the owners of their respective parcels.

In order to assist in accomplishing this, it is recommended the lead agency responsible for the cadastre prepare information sheets or booklets of questions and answers or of general information about the cadastre for general distribution to all potential landowners. These can be distributed either to the general population or to each landowner when the Certificate of Title (Passport) is delivered. This gesture should accomplish much in calming the new landowner's concerns over the delay in obtaining their final passports.

(b). As part of my study I visited several of the small villages and some of the rural areas. I found a universal lack of understanding of the purpose of the cadastre. Most village officials saw it strictly as an opportunity of the Government to collect taxes. After an explanation was made as to the total cadastre concept, the mayors better understood the cadastre was a means of better managing their villages and the land and resources of the Republic. Ultimately all property, utilities and encumbrances and the value of the land would be identified to provide them with a new and better tool to manage their villages and to serve their people.

This mis-understanding also extends to the workers for the

various ministries. In Yerevan I found no problems as to their understanding of the cadastre, but the further each person was removed from Yerevan, the less the understanding of the cadastre's role and the part each individual played in the over all Armenian cadastre.

I recommend a series of workshops and public meetings be conducted, using a training manual for employees and a handbook for the villages explaining the cadastre.

With planning, employees could meet in a cadastral training session where the respective officials of the Cadastral Committee and the staff from ICMA would explain and outline plans for the cadastre. Presently there is no universal understanding of the cadastre among the employees, the Government or future land owners

There should be a session for staff and one for the surveyors.

This could be expanded to transcend the village and city mayors. Meetings would be held, with individuals who are trained in the area, where the mayors of the villages and cities would be instructed and the system explained to them. These meetings would be held in each district or combined districts, where officials from Yerevan could present the program, indicating the real purpose of the cadastre as how to better use the lands and resources of the Republic and not for taxation purposes.

Time frame: With prior planning a large number of the Districts and villages could be instructed in a two week concentrated effort. The cost would probably be approx. \$3,000 - \$5,000.

(c). A later recommendation will discuss the management structure. At this time the recommendation is made that a single indexing system be adopted for all of the cadastres; the fiscal, the multi-purpose and the legal cadastral and that it be adapted from recommendations made in the above referenced report. As a supplemental element the name of the listed owner should be indicated in the total description as one of the elements. This will make it possible to retrieve any parcel either by parcel number or by the owner's name. This element is necessary to have a workable cadastre. The strength of the proposed indexing system is that it will utilize existing land districts now recognized and will require only indexing the existing

maps.

The UN/FAO report voiced concern that multiple parcels were being conveyed and identified on a single document. The report dated 9 June 1994, Annex 1, page 4 (6) prepared by a study team of the UN/FAO believed the manner in which parcels with multiple plots (more than one parcel to the State Act) were being described would cause future problems. This concern was also expressed in a report, Aide Memoire, by the United Nations, Annex 3, Page 6 Item 6, They quoted "[t]his will create difficulties in the future when the owners wish to sell only one single plat."

I disagree. When a person has an understanding of land conveyancing and its related aspects, one will find these original multiple deeds are accepted in all countries that rely on a title system.

The major problem was not multiple parcels in the same document, but the same numbers were being used for multiple parcels. That is, there could be two parcels numbered "45a" in the same village, yet each parcel could have a different owner.

Some of the State Acts examined included more than one parcel to the same grantee or recipient on the same document. This consultant also found the same problem existed. A recommendation was made to the proper authorities and the reasoning to discontinue this practice was understood. Multiple parcels could still be conveyed, but separate numbering should be used for each separate and distinct parcel of land, even though they were to be conveyed in the same Certificate of Title or State Act. In an initial State Act it is legal and accepted in other nations that multiple parcels can be conveyed in a single document without any technical or legal problems.

In developing the basis for an adequate description it is suggested that seven elements be used to index a parcel. Such a number system will meet all requirements for rural, urban and all classifications of city privatizations.

The elements are:

City number; if rural than 00.

District number;

Map number 1:2,000 scale;

Map number 1:500 scale;

Parcel number; as determined by survey or examination.

Function; Type of land.

Name; Name of person or persons who own the land.

The strengths of this system provides for distinct location by numbers or by name and the only words used, other than numbers, will be the parcel owner and the land use.

This system of indexing nicely lends itself to both the systematic and the sporadic system of cadastral survey completion. Task 5 will identify the need to create a data base of the City of Yerevan's records.

In the future actual surveys of the individual parcels, including those on which the units are placed may be conducted, described and monumented. Apartments and condominiums, as a minimum, should be identified and indexed. Using this system of indexing will permit the Inventory Office to identify all apartments and condominiums prior to the granting of any new titles.

Excellent new computer software is now available to assist the managers in this task. The consultant witnessed an excellent example of the indexing of multiple storied descriptions on a single base or "footpad." Several years ago the City of Colorado Springs, Colorado started a Land Information System. A personal examination of their indexing system for multi-storied buildings was quite impressive, in that they could inventory multi-layered structures that used the same base or "footpad." The software used was "commercial software that is readily available to any user. This is apparently available from The Environmental Systems Research Institute, Inc. under the trade name ARC/INFO, The firm maintains distributors world-wide. It is recommended the authorities further investigate the possibility of modifying this program for possible adoption in the Republic. The firm has

offices world-wide. Annex 7.

This proposed indexing system can also be adaptable if and when the cadastral base maps are converted to reproducible base maps using for its base the existing topographic maps now in Armenia.

(d). In analyzing the third area it is recommended that immediate attention be given to making the cadastral system "work. " To be effective over a long period of time land owners and potential land owners must understand the system and gave confidence to it. As pointed out by all consultants and advisors, three different agencies now manage the cadastral system. Earlier consultants have recommended that a separate agency be created. At this time I disagree with this recommendation, in that the three existing agencies are working effectively in their respective areas and to disrupt this would set the entire program back. It is recommended that a Cadastre Management Board or Committee be created from the existing three agencies with additional members from other ministers assigned as advisors. In the present state of financing it is probably impossible to have additional funds allocated from the Republic to fund a new and separate agency. By using those individuals who are presently assigned the cadastral duties and working in unison with the other agencies towards a common goal, would be the most logical approach to get the job done. Advisors and other members from the Ministries of Justice, Finance, Forestry and Minerals and possibly others would, by necessity, have to become involved to accomplish the task over the long run. Initially the important task is to get the private lands identified and registered, but in the overall scheme of the multi-purpose cadastral system all lands and property rights that remain the ownership of the Republic of Armenia should be numbered, identified and located. I suggest the report I presented at my closing be examined for greater details. Annex 8, recommendation 2.

There is no reason why this Committee could not be formalized immediately. During my visit, I worked with a similar Committee that could be the nucleus for this. This committee was composed of individuals from

the three main agencies which conducted cadastral surveys. I was pleased with the professional manner in which we confronted common cadastral problems. I am convinced that if each agency put aside personal desires and differences and worked towards a common goal this committee could be an effective and efficient organization capable of completing the task at hand.

It has been reported that nearly 90% of the rural (farm) lands have been privatized, but to the best of my determination probably less than 20% has been surveyed. The big project will be the conducting of cadastral surveys of the rural lands and any lands in the urban areas and the cities that are needed to prepare the necessary plats and descriptions. Some time in the development of the cadastre all of the Republic's lands, forest, mineral, watersheds, etc., will have to be identified and surveyed. Presently there are few private land surveyors in Armenia. At this time approximately 150-200 surveyors are employed by the various ministries to conduct the necessary surveys primarily in the rural and urban areas. There seems to be little inter-agency relationships between these surveyors. Eventually a group of private surveyors will be needed to conduct the necessary surveys for future conveyancing.

It is recommended that a position of Surveyor General, or Chief Cadastral Surveyor, be established within the Republic to direct and give guidance to the entire survey profession in Armenia, both public and private. The primary duties of this position will be to develop standards and to prepare for the inspection of all required surveys by both the Republic surveyors and private surveyors. Eventually this person could act as an inspection agency to assure that all required surveys would be performed in a professional manner to established standards. This position could act or be attached to the Cadastral Committee, but it should be an independent functioning position for technical responsibilities.

This may seem to give undue weight to the surveying aspects of the cadastre, but of necessity the key to any functioning cadastre by which individual parcels of land

are being created and identified is the requirement that each individual parcel within the Republic of Armenia have its own separate unique number and description. No other parcel within the Republic of Armenia should have a similar number or description. Adequate surveying of the respective parcels is a key to the entire process for taxation, conveyancing and identification.

Throughout the report prepared by the UN/FAO, dated June 1994, numerous references are made to the surveying aspects of the cadastre. A selection are as follows:
Annex 1.

Page 4: 4. "The land holders shifted the boundary corners as required. No substantial survey marking was used, with the boundary corners being marked with whatever materials were locally available, e.g. stones, sticks and the occasional steel rod."

Page 7: (16). "Accurate geographic referencing of the cadastre is a key factor in building a land information system that will be used in the future."

Page 8. (19). "Progress on the surveying of allotments has been hindered by resource constraints and lack of experience in cadastral issues... [M]ajor constraints are lack of vehicles, petrol, surveying equipment, computers, marking materials and training."

Page 9; (20). "The 'land construction specialists' have 'accurately surveyed' and defined the allotments, but no survey marks have been placed. This will eventually lead to disputes as to the exact location of boundaries and impede the efficient operation of the land market, due to uncertainty of parcel delineation... ."

Page 10: (23). "The training that these people (land surveyors employed by the Republic of Armenia) have received in cadastral matters is limited to the former Soviet Union Cadastre. Therefore this aspect would also be a constraint to the efficient functioning of the land market."

The stated references give much weight in understanding and identifying the necessity of sound

surveying principles and practices in the cadastral area.

These all add more reasoning to identifying one person or office who ultimate would be responsible for surveying activities, which should include establishing guidelines, developing methodology and conducting inspections for cadastral surveys.

The person should not only have a knowledge of surveying, but should also be trained in the legal aspects of land and boundaries. All boundaries recited or identified in State Acts (Certificates of Title) create the lines and boundaries of the parcels. They must be accurately described, adequately monumented and precisely measured. These principles apply to all real property, including rural lands, urban lands, with and without dwellings, city lots, condominiums and apartments.

If the recommendation concerning the Surveyor General is accepted, this individual should be given the authority to establish guidelines for parcel monumentation, including surveys, parcel descriptions, and determining the qualifications of both surveyors in Government service and the new nucleus of private surveyors that will be needed in the near future.

C. TASK 2 DISCUSSION

(1). Task 2 was to review the legal framework for implementing the land registration system, including the contract law, civil code, and the 1991 Land Code plus the recommended code.

STATUS

The detailer will not address the contract law and the civil code because this is being addressed by an other ICMA consultant, but the existing Land Code and the Proposed Land Code were examined.

It is apparent the existing land code was enacted with little thought or experience of implementing the cadastre. With the desire to privatize as many land parcels as possible and as quickly as possible the Land Code was enacted. Many land related questions were not adequately analyzed or addressed, and now the Republic is attempting to rectify the Codes shortcomings. All comments are made to the respective articles, sections and chapters of the existing Land Code. Annex 9.

In the opinion of the detailer the present land code fails to address many of the present cadastral problems. The cadastral system incorporates many aspects of land ownership and usage that initially were not considered. Now in a effort to rectify these problems a revision to the land code is proposed, but it's adoption is meeting with much resistance.

Comments and Recommendations As to The Existing Land Code:

Chapter 1

Article 2 fails to identify that all lands are in the ownership of the Republic and any title or rights that are granted come from the Republic and all other land rights that are retained become the sole and exclusive power of the Republic.

Article 4 is very limiting, but is being expanded, by necessity, under the proposed land code.

Article 7 limits temporary land use to ten years. This factor will make an effective cadastre difficult, in that there should be a longer duration of time. Land parcels will be constantly changing and the maintenance of the records will become difficult.

Article 8 fails to identify where the funds that are collected will be used. They should be designated to be deposited either into the general treasury or into the cadastre to finance that program.

Chapter 2.

Article 11

Line 4 places the operation of the cadastre system with the Council of Ministers. The present council has not taken active participation in the cadastre. This should be delegated to the Cadastre Committee with sufficient instructions to permit them to effectively commence the operation of the cadastre.

Article 12

This article addresses the Local Council of People's Deputies. Many responsibilities are given to this group, yet it was my observation that these important individuals have received little guidance or help in understanding or in being able to apply the cadastre within their respective villages.

Part VIII Article 70 also addresses land disputes. An examination of this article indicates to the consultant that the disputes should be categorized into three areas; questions of land boundary, questions of title or land ownership and a combination of the two.

Article 75 fails to address a very important right that must be available in any Republic or democracy, that of the right to be represented by legal counsel.

Any land code must provide for a representation of the individual by counsel in the event legal questions arise.

The cadastre must be predicated on adequately described and correct descriptions of the property being conveyed accompanied by adequate and accurate surveys properly monumented. In the cities most land records by which the lands are being privatized are prepared by very basic methods, usually by simple measurements with

a measuring tape. In the urban (villages) and rural areas plane tables are the means used by surveyors to determine the boundaries of the respective parcels. As these parcels are conveyed at a later date or in the event they are subdivided into smaller parcels, these surveys will be totally inadequate. Legislation or regulations should be prepared to set minimum standards for surveys of all parcels. They should include such requirements as survey closure, type of survey equipment used, types of monuments to be set at corner points, and standards of maps that are to be prepared. These could be accomplished by directives from the individual who has authority to establish, to evaluate and to ultimately enforce minimum survey standards.

The consultant found that no land (parcel) corners were being identified using permanent monuments. Any monuments set at the time of the creating surveys legally identify the parcels surveyed, described, and for which the Passports (Certificates of Title) were prepared and transferred. Both the UN/FAO report and this consultant are in agreement that placement of permanent monuments would reduce possible future land disputes. This fact was also pointed out in the UN/FAO report , Annex 1, p. , and in its later report. In the later report a recommendation was made that concrete monuments be set at all corners and these could be made in the country as a "make work" project.

D. TASK 2 LONG TERM RECOMMENDATIONS

(A). A recommendation is made that the Cadastral Committee or some other qualified agency or individuals prepare outlines and materials and present a series of workshops for the Local Councils as to the fiscal and legal cadastre and their responsibilities under the Land Code. This will be very helpful in attempting to standardize approaches as to responsibilities as to the disposition of the lands, the completion of reversions of land parcels and the analyzing and adjudication of land disputes. The Code should provide for an avenue of appeal from the decisions of the Councils. This route should be through the Justice Department.

Surveyors and government administrators should be active participants in these workshops. If future surveys are going to be conducted, it is important they become known to landowners in the urban areas as well as in the villages and the rural areas. It is equally important that each "footpad" of apartments and condominiums be monumented as it is that for rural parcel. Placement of steel rods with metal or plastic caps identifying each parcel is recommend as the ultimate desire. Samples of these are shown in Annex 10. The consultant accepts this as the ultimate desire, but

he fully accepts the fact that the immediate needs cannot be met for total complete due to funding. Plans should be initiated for limited monumentation of the most valuable properties, and ultimately and gradually the total monumentation can be phased in as funding becomes available. Legislation should provide for accepting these later monuments as original for legal purposes.

(b). Although a technical recommendation, the consultant considers this recommendation to be more in the legal area, and which may in the future become a legal problem.

As was stated, I saw no monuments being set for land parcels, either in the villages, cities or the rural area. Whereas in apartments and condominiums the actual monuments are the walls of the individual units, it is imperative that the land parcels on which each unit is placed also be identified, described and monumented plus being placed on a cadastre map.

It is recommended that all parcels being surveyed have physical monuments set at the corners of the surveyed parcels and they then be referred to and identified in all subsequent Certificates of Title.

This requirement will require additional funding and planning. The monuments can be produced from local businesses in the Districts, with the caps being purchased for import.

E. TASK 3 DISCUSSION

1. Task 3 addressed aspects of forms used, legal descriptions, procedures for registration, storage of records and computerization of records.

The consultant found that a minimum of four forms were being used by the three offices responsible for cadastral activities to grant the privatized lands.

Each form was retained by that agency. The ultimate plan should be to have the original form retained at the local level and have a copy of the form filed in a central agency, with a copy being delivered to the parcel owner. When perfected all of the forms should be similar in design.

No one central agency was found to have total responsibility for cadastral and registration activities in any of the cities or villages.

Areas of Responsibility were found as follows:

(a) Rural Areas

Surveys in rural areas are the responsibility of surveyors employed by Armgiprozem in the Ministry of Agriculture. Most of the rural lands have been privatized and temporary certificates granted based on a limited number of surveys. The granting of the final certificates is being delayed because of the surveys in the rural villages and rural lands are behind the projected completion dates.

Apparently the surveying delays are a result of two factors. First, is the lack of sufficient and proper equipment. Second, is a lack of trained surveying personnel and support staff. Estimates given by various managers at this agency has a five year backlog of surveying of the rural lands.

Surveying equipment being used consists of plane tables and metal tapes. All surveys are measured with obsolete meter chains and the final plats are drawn on plane table sheets. Usually the parcels in an entire village will be placed on one or more sheets. The parcels surveyed and identified are then referred to in the State Acts or Certificates of Title. Although not actually observed, I believe the survey crews are not placing property monuments at the land parcel corners. A recent UN/FAO report, Annex 1, made an evaluation of available equipment at Government agencies. This report indicated that much of the equipment was absolute and/or unsuitable for use. To have a viable cadastral surveying program this problem must be discussed.

Armgiprozem was asked to present a "need list" so a suitable number of survey crews could be adequately equipped. This was requested because the equipment examined was old and badly in need of repairs and maintenance. Annex 11.

The survey equipment requested is basically for replacements of worn equipment and for staffing other crews. I point out that the survey equipment requested, plane tables, is the most basic of survey equipment that no longer is used in other countries, nor is it available for purchase. Manufacturing of plane tables has been discontinued by the major equipment firms.

Annex 11 also lists such needs as basic rulers and scales that are used by office staff in producing the office documents.

(b). Small Villages and Urban Areas outside Yerevan

The Inventory Board of the Communal Department under the direction of Gagik Bajargian produces Surveys and completes the necessary State Acts (Certificates of Title) from 38 District Offices. The smaller villages are being served from the nearest survey and registration office, usually located in the largest city in the District. Most records are considered confidential and available only to the landowner and the government. These urban offices were staffed with a chief surveyor a survey crew and office staff. Most surveys were conducted by measurements, in that no angles are being turned and no monuments are being set or established at the property corners that are being created. The same problems were found here as in the rural areas. I was told the survey crews did use directional surveying equipment and not plane tables, but none were shown to me. The same problem of the scarcity of equipment was related as being a major factor in delays causing the failure to complete State Acts in a timely manner.

Original records are maintained and stored on open shelves in each district office. These are subject to damage and destruction from weather and fire.

The Registry Office uses two forms in completing state acts. One is used for land with dwellings and a second form for land without dwellings. No reason was given for this procedure, but it probably is a result of the philosophy fostered by the Soviet system where a dwelling unit was considered separate and distinct from land.

(c). City of Yerevan

In the City of Yerevan all records are maintained in the Municipal Record Office. Insertions and data are added and maintained by individuals, without the aid of any mechanization. The record files of the City are impressive. They maintain nearly 500,000 records of apartments, condominiums and individual parcels that are situated within the city limits.

This agency offers a fruitful opportunity for modernization of its records. Presently all records are maintained in an environment that is subject to possible destruction. Records are manually filed and updated by hand and then filed by the address of the parcel on a shelf, in a room without fire protection.

The historic records of the city are voluminous. Many of the records predate 1900, and, if destroyed, can never be replaced. They are one of a kind, and when identified and cataloged will form the basis of the modern city cadastre.

Of all of the records observed and examined, the greatest concentration is in the City of Yerevan. The other two agencies maintain their own records and operate independently.

As previously stated the registration of all lands is the responsibility of three agencies. Each of whom use their own form or forms for parcel registration. Two of the agencies use separate forms for land with dwellings and for lands without dwellings.

Once the initial privatized parcel (State Act) is presented it should be registered to perfect the Fiscal Cadastre for tax purposes.

Most countries which provide for the registration of land transactions to reflect the current owners of land parcels rely on deed books and maps. Indices of Grantor and Grantees are maintained, usually by manual insertion or correction. There are some jurisdictions that do have totally computerized registration. There are a few states and some countries that provide for computer indexed systems of land registration.

Secondary transactions should be given equal standing with the initial State Acts, in that they should be required to be registered in the same depositories. At the present time little thought is being given to future transactions.

It was determined that the rural surveys and registration is being financed through direct funding from the Ministry of Agriculture, through its support of Armgiprozem. If the cadastral functions were removed from this office, its source of funding would probably be terminated.

The cadastral activities under the Registry Office are apparently financed by a user fee. No direct answer was ever given as to the source of funding.

Unfortunately, no one has any estimate as to the actual cost of operating a cadastral system. In order to be able to make a cost analysis of operating a cadastral office, a cost analysis must be made.

F. TASK 3 LONG TERM RECOMMENDATIONS

(a). A sound, feasible, workable and applicable cadastral system cannot meet the needs of any country unless there is a centralization of the records. At the present time there is no central record office. To solve the problem there are two alternatives; a centralized record system at a District level or one centered in Yerevan. At the present time there are no facilities available for registration in Yerevan, except the City records. When the records are computerized at the District level, it would be a simple process to transfer the cadastral data, electronically or by computer disk, to the central record office. This would not eliminate the need for records at the District or urban level, since the majority of the use will probably be in the areas away from Yerevan. People will use records if they are readily available. If long travel distances are required, then the records will probably not be used. There seems to be a universal trend that consolidation into larger units is better. This may be

so for management purposes, but in larger districts supervision of field crews may become a problem.

It is recommended the entire registry system be filed in data banks from computer generated data at the place of survey or State Act preparation. This will require the purchase of a sufficient number of computers, with staff, to perform this task. Since my recommendations are to retain the present Districts, this will require a minimum of 38 computers for the districts, and possibly three for the City of Yerevan. The computers can be made available for the survey crews to plot their surveys and to place them into data files from which the office people can extract the information for preparation of the Certificates.

The UN/FAO report recommends a fewer number of Districts to eliminate multiplicity. To do this would remove many of the survey crews from technical support and to be effective the crews must be close to the work that is being performed. Excessive travel time is non productive.

Having Districts with modern computer technology will also provide the opportunity to input data that has already been completed.

(b). Recommendations relative to the location of the responsibility of the cadastre have already been made. At this time, the Republic of Armenia is probably unable to support a new Government agency. The present three functioning agencies are financed either by appropriation or by consumer generated income and as such are working rather independently of each other.

All prior consultants, including the UN/FAO report, Annex 1, recommend a central cadastral agency. I agree in principle, but I disagree in application. There is no additional funding or staff available to finance and staff a new cadastral agency. In order to form a new cadastral agency separate funding plus staff is required. At the present time to form a new agency would require one to hi-grade those present agencies which now conduct cadastral surveys. It is suggested that once the Cadastral Committee is established and functioning

that it be permitted to operate until sufficient funding is available to establish and finance a new agency. It would be excellent if this would happen, but to do so would take the understanding of those who will be affected and possibly new legislation.

This committee should plan for future development by designating individuals for overseas study at universities either in Europe or the United States. These people would become proficient in cadastral management and would guide and direct a cadastral program. Presently the ICMA consultant recommends either the University of Florida or the University of Texas Corpus Christi as suitable short or long term study organizations.

Preliminary contacts with the University of Florida, School of Surveying, indicates they would be receptive to engaging in an Articulation Agreement with the Technical University in Armenia for cadastral development, which would include the exchange of students and teaching staff.

Funds to finance this training should be sought from either the United States Agency for International Development, from United Nations or from the World Bank.

(c). It is recommended that all agencies who have responsibilities for the distribution of land parcels design and agree to use a single form for all privatized lands. With a properly designed form all real property and dwellings, including apartments can be identified and placed both in the fiscal cadastre and the legal cadastre. Once additional data is available then those parcels can be incorporated into a multi-purpose cadastre.

The recommendation that one form be designed and used for all privatizations is important. This task could be accomplished by the suggested Cadastral Committee. These forms should be referenced to or supplemented by cadastral maps that have been adapted from existing maps. When these are completed it is recommended that each individual receiving privatized land be given a copy of the State Act for their personal

records.

Software suitable for the registration of the State Acts must be developed. This can be developed after the Cadastral Committee has agreed upon a suitable common form for use by all agencies. A single form should be developed for lands, regardless if dwellings are present or not. The same form should be suitable for apartments and condominiums, as well as vacant land. There should be space on the form for either a complete description and/or a map of the parcel or structure.

Time frame and cost: The office of the Scientific Research Center of City Management Systems, Yerevan City Executive Committee, under the direction of Artashes Arakelian, is capable of producing such software. I have examined the capabilities of this office and believe this could be written and debugged in one week. A grant of \$2,000 should be suitable to produce this.

It is recommended that these parcel descriptions be made available for public examination by public registration. Although there seems to be a consensus among the agencies that these records should remain private, examination of these records by the general public is necessary to provide individuals to research records for future transactions. Public records and map should be modified or corrected to reflect any subsequent transactions relating to the parcels.

It is recommended that once an original State Act for a parcel is filed and registered, the data should be entered into a computer based system for filing and storage.

(d). At this time the majority of the people employed are in the surveying phase of the cadastre. Until this initial phase of the cadastre is completed this will probably remain the largest. When the original surveys are completed, only a small nucleus will be retained. Ultimately rules and regulations should be made to provide for a cadre of private surveyors. These private individuals will have the

survey duties on the resales of land parcels and locating parcels for which no surveys were ever conducted. This may not apply to apartments or condominiums. In each District office, in addition to the surveyors, at least two clerks will be required to create and to maintain the land records. The District Supervisor should have surveying experience so as to be able to give technical direction to the survey crews and to create the necessary guidelines.

(e). It is apparent the present cadastre cannot be implemented or operated without some positive funding from the Republic of Armenia. Although some financing can be generated from user fees, initially this is only a remote possibility until the cadastre is operating efficiently. It is understandable the Republic should be involved in the financing, because in the overall picture, the Republic still retains approximately 40-50% ownership of the land area in Federally owned lands.

(f). Unless automation is initiated in the early phases of the cadastre, it will become more difficult to initiate as it progresses. It is recommended that a moderate number of computers with the needed support and training be made available to initiate a property indexing system. To keep the integrity of the ICMA mission the major thrust of responsibility should be directed to the urban and city cadastre. It is suggested that a test project be designed and initiated in a village and in one designated area within the City of Yerevan for analysis and evaluation. In these two test areas automation would be initiated using the proposed indexing system, the maps references, including the base maps and the filing through a computer designed system. This should be designed to place the original data into the system, to reference the map data to the parcels and to provide data for taxation purposes and for the possible resale of parcels. Of course, in the village there should be very few sales of privatized lands. The majority of the parcels should be located in the cities. Provisions should be made to transmit this data to the Tax Inspectorate Office so they can in turn create or update the tax records.

A cost analysis should be maintained so as to be

able to make a determination as to actual costs of operation of the entire cadastral operation.

G. TASK 4 DISCUSSION

1. Although requested that only Tasks 1, 2, and 3 be addressed in the final paper, not to address tasks 4 and 5 would leave the report incomplete. With understanding and approval of the officials for whom this report is prepared, these two tasks are addressed.

Task 4 consists of:

(a) addresses an indexing system for all cadastral purposes. It asked that a brief options paper be developed setting forth indexing options for unique identifying properties by location for all cadastral purposes. and

(b) undertakes an analysis of the conditions relative to Cadastral Mapping standards within context of both a knowledge of what is currently in place relative to real property and mapping information and a vision of how all of the information should ultimately be used.

Recommendations for a program for standardization of maps and other information, and options for indexing systems in order to develop effective systems that can

readily assist in the systematic and efficient transmission of information and facilitate the development and maturation of property markets.

This Consultant recognizes that land records for the fiscal (tax) cadastre are necessary as soon as possible after the State Act has been finalized. This is needed so that the Republic of Armenia can implement the fiscal (tax) cadastre and the collection of taxes be started. Both legally and practically, all parcels must have a finality of identification and location if the legal and fiscal cadastre are going to be manageable and become interdependent.

The consultant believes a sound workable cadastre must be based on usable base mapping. In discussing the mapping phases of the cadastre it was found that the present available maps were being used by several agencies. Initially the main thrust must be in the area of identification of the original land parcels as they are being surveyed. At this time Armgiprozem is identifying most parcels that are surveyed by them in the rural cadastre. These new parcels are being identified on their base maps on file in their office. I was unable to determine if all of the rural surveyed parcels are being identified as they are surveyed.

The process of placing these parcels on the base maps is slow and the locations are of questionable accuracy. The base maps that are being used are at a scale of 1:5,000 or 1:2,000. The base maps are on rafting paper and glued onto "metal mounted" bases, that is the base maps are drawn on a drafting base that is an aluminum core covered with drafting quality paper. This type of drafting base does not readily permit reproduction. All parcels that fall on a map are hand plotted or drafted directly on the paper base. Each parcel is visually placed on each map base by distance measurements of the parcel, without benefit of a precise or accurate geographic positioning. Thus each parcel has some error of positioning. Each parcel is field surveyed either using plane tables or by measurements of lines of the parcel and then the parcel is "fitted" to agree with an adjoining parcel(s). No directions or compass bearings are indicated. No individual base maps

of the areas of the villages were found outside of Armgiprozem. When asked to see the reference map for a village, the mayor showed me the only map available, a Russian map that depicted soil classification. This is unsuitable for cadastral purposes.

In considering cadastral mapping, two specific areas must be considered. (1) the actual field surveys and (2) the availability of adequate mapping for the villages and the urban areas and the placement of the individual parcels on these maps. An examination of the products being produced indicated there are no written standards for cadastral surveys or for survey map standards. The cadastre must be established on adequate and accurate maps that depict sufficient information on which to maintain records of all the parcels that are surveyed, described and for which Certificates of Title (State Acts) are prepared. Now all available maps at the various scales are topographic maps, that is they show contours. Contours are not necessary for cadastral purposes. Also the metal mounted maps do not permit versatility for use, in that they are difficult to reproduce and cannot be readily duplicated. In order to have an effective cadastral system there must be adequate maps on which to locate the parcels that are conveyed to the individuals. At this time none were seen at the District or the village levels. In keeping with this, the parcels identified on the maps must first be surveyed and identified for the Certificates (State Acts). At this time no standards have been developed for surveys or for the monumentation of the individual parcels. One of the main purposes of any cadastre is the positive identification of each parcel for immediate and future identification. This one purpose requires adequate mapping and adequate surveys of the individual parcels.

The UN/FAO report, Annex 1, P. 6 (11) indicated the Republic of Armenia is adequately covered by maps of various scales. This was found to be true, but these maps are not readily available to local villages or other urban areas, in that the ones examined are unsuitable for local use.

H. TASK 4 LONG TERM RECOMMENDATIONS

(a). As earlier discussed, the availability of adequate base maps suitable for varied cadastral purposes by the various Government agencies, and then providing for mass production and ultimately for public distribution is a prime necessity. With over 5,000 of these "metal mounted" base maps of several scales and filed in the archives of several Government agencies, a short term project probably is not possible. Yet it is necessary that all of these base maps be collected and filed in a single location that shall be determined. It would not be feasible to collect and file the "metal mounted" original maps. It is recommended these maps be photographically reproduced and then multiple copies made. Copies of each original could then be distributed to agencies who require them.

A firm that specializes in this process was consulted and cost figures obtained to accomplish this. One of two means, depending on the wishes of the Republic and on funding available. See Annex 12.

The acceptance of one of the two alternate suggestions will make maximum utilization of local labor and specialists with all of the work being accomplished within the Republic; the second will utilize local labor in one phase only within the Republic of Armenia and the second phase being accomplished in the United States.

The first recommendation is that all of the "metal mounted" base maps be photographed in Armenia using high-intensity and high resolution film that is capable of photographing color and pencil details. The process would be controlled so that the maximum of detail can be retained from the original base maps. Upon completion of this phase the original maps would then be placed in the Republic's archives for safe storage. This phase would be completely accomplished within the Republic of Armenia. It would be expected that space would be made available to accomplish this in one of the Government offices. An American technical specialist(s) would supervise the entire project using Armenian help. Maps that are now in the various offices would be brought to this centralized location for completion.

This photographic phase will require a copy camera capable of holding the original base maps. The proposal made by the American firm approaches this from two directions. First, a suitable camera is available in Armenia for their use and second a suitable camera would be purchased in America, shipped to Armenia and after completion of the project it would be left in Armenia for future use.

After this phase is completed, the second phase would then be attempted. The negatives would either be sent to the United States for further work or a separate group of specialists would go to Armenia and supervise the making of copies from these negatives. The copies would be on a stable base material suitable for making additional copies and suitable for drafting and drawing. One master copy would be produced for the cadastral records. On this copy all additional drafting, indexing, numbering and cadastral information would be completed. From this master copy additional copies of the completed maps would then be sent to the interested villages and Government agencies which would require them for their records.

Both alternates are presented for consideration. After study the one that would be most advantageous to the Republic of Armenia should be adopted.

(b). A typical village and a heterogeneous neighborhood in Yerevan should be selected that would best represent typical cadastre needs and a feasibility study be made as to costs.

Selecting these two areas would give an understanding of the general nature of the major diversities of the Republic. One could expect a concentration of people with a fairly rapid turnover or sale of property in Yerevan; yet in a typical village the opposite would be true. There would be less congestion of people and few if any sales or transactions of the property.

Since most of the cadastral surveying activities are concentrated in Yerevan, the villages and the smaller cities, provide these surveyors with suitable equipment to perform the needed cadastral surveys and monitor their progress and costs. Provide training or performance manual as to standards and required performance.

In the same village provide a single computer, with a trained operator to input the survey data and State Acts using the software prepared above.

Make available to the Tax Inspectorate and/or Registry, either by computer disk, or by hard copy of all records.

Note and indicate these parcels on the cadastral maps that will be made available.

Time Frame and Cost: This project should be run for approximately 1 month duration after it is once set up and functioning. I envision that it would take app. one week each to get the system functional, after the software is developed. Cost for the proposal would be both equipment and labor.

3 Computers plus 3 printers \$ 8,000.

Labor \$600- 1,000.

A one time expense of \$3,000 for surveyor training.

In the UN\FAO report, Annex 1, recommendations were made as to equipping a cadastral program with computers. I agree with the recommendation but I question prices quoted in the UN report on the Armenian cadastre.

An second independent study was made and the following prices noted are based on current market prices, excluding shipping, Atlanta, Georgia.

As an alternative to the, or as a supplement to, the following is recommended to staff a study cadastral office:

The suggestion is made that two computers be made available to the City of Yerevan for starting input of cadastral data and for the preparation of State Acts for distribution to private landowners and one to a district office.

The following equipment is suggested, with prices indicated:

3 each 486, 33 or 50 mgh computers,
with 14 inch SVGA monitors. 420 mg

hard drive, 2 floppies, DOS 6.00 and windows
or IBM, 486, 340 mg hard drive, DX 2-50, or
up graded version.
\$1,600 each \$ 4,800

2 each Laser plotters,
A-E capabilities, 1 to be used by survey team
up to 1 m x 1 m. 1 to be used with the survey.
\$2,300 each 4,600

If needed

DOS software for plotting surveys 1,300

Misc. needs 700

Total Office \$ 11,400

Plans should be made to have the cadastral
software developed by a grant to the Yerevan
City Scientific office. Estimated time of
development 5 days. Estimated cost 1,000

Office + cadastral software 10,800

I. TASK 5 DISCUSSION

1. Task 5 summarizes all of the previous tasks that address the Armenian cadastre. This task should be addressed in relation to developing a continuing program directed towards urban areas. The legal cadastre relative to an illustrative city should be analyzed. Any responses can apply to all urban areas, including the City of Yerevan, for both the sporadic and the systematic approach of the cadastre. It is apparent the cadastre of the urban areas is in the sporadic mode, in that Certificates of Title, or State Acts, are being prepared only on an as needed basis. This basically applies to the urban areas and within the City of Yerevan. On the other hand in many of the villages, while the Registry is systematically surveying smaller villages and rural areas. In the larger cities and larger villages the work is being completed on an as

needed basis, or as requested.

The Tasks identified in the request addressed the following areas for an illustrative city:

- (a). the availability of existing base maps at the appropriate scales.
- (b). the availability of trained surveyors and other skilled personnel, the adequacy of their training, and typical labor costs for such personnel.
- (c). the general difficulties to be expected in defining boundaries for different categories of urban property as needed to make preliminary estimates of the likely productivity of survey adjudication teams.
- (d). The availability of cartographic capabilities, and approximate costs for obtaining cartographic information.

Based on results of the above initial strategy recommendations were requested addressing the sporadic and the systematic methods. Items that are to be addressed are land boundaries, ability to subdivide parcels, increasing cadastral survey skills, and the engaging the Institute of Cartography and Geodesy to conduct cadastral surveys on an as needed basis.

2. Both sporadic and the systematic cadastres need to be conducted simultaneously to have an effective cadastre. On system cannot exist without the other. Each will play definite and important role in the completion of any cadastre. If time were not of the essence, the most logical approach would be to survey each area, each village and each city on a planned systematic basis. It should be realized each of the two will have a definite place in any cadastre. We know this is not feasible.

- (a). Funding for survey crews is not designed for the systematic approach.

(b). Many areas would be surveyed that are of a low priority. The systematic approach to surveys and cadastral activities is being conducted by Armgiprozem in many of the rural areas and villages. This is accomplished by issuing preliminary Certificates of Title (passports) and later completing the final certificates as the village or the rural area is field surveyed. Presently the survey crews have a five year backlog of work. This is not expected to improve in the immediate future. Several causes were identified. One is the lack of surveyors and second is the fact the present survey crews are ill equipped with inadequate or antiquated equipment. Adding the fact that the methods of conducting the field surveys are basic and probably will not improve all add to the problem. However the problem is not unsolvable. The fact remains the initial or original surveys are the first steps on the history of each parcel. It is apparent that many of the parcels will require re-surveying when they are sold or transferred in the future. In all probability little activity will be encountered in buying and selling rural parcels. They will probably be retained for generation in the same family. Since no monuments are being set at the property corners of the parcels, it is likely when any parcel is sold at a future date monuments will have to be set to identify the exact boundaries of the parcels that are being sold.

This philosophy also is being applied to the city and urban parcels. The corners monumented will affect a greater number of ownerships. From a monumented parcel scores of descriptions of a single building will be referenced.

Properly described and monumented tracts of land are an absolute necessity when it comes to being able to identify a single-unique parcel of land for description in a Certificate of Title (passport) or for future re-sale. At this time this basic requirement of monumentation is not being done at the time of survey. The positioning of boundary monuments at the corner points of the land parcels may be done when a land parcel is subdivided at a later date. There is no requirement for monumentation of apartment units or of condominiums in the cities, but the requirement for

monumentation still is necessary.

Base maps are available for the entire country. I was unable to find a complete index map depicting what is available, the scales and the date of issue. I did ask for such information but it was not available at the time I was in the country. Until this is accomplished no proper evaluation of the Republic's needs can be determined.

Examination of the field surveyors who were conducting the surveys for both the Registry Office and Armgiprozem revealed a staff trained in the technical aspects of surveying, but lacking in understanding the legal aspects and duties of cadastral surveying. Without explanation or additional training in cadastral surveying methods it will be difficult for these crews to understand their role in the overall process.

In order to determine the magnitude I asked Armgiprozem for a list of needed equipment. Annex 11. The equipment listed indicated a tie to the past, and no plans for the future. All surveying activities are being conducted with out dated equipment. For field surveys plane tables seemed to be the basic items. Yet these instruments are no longer made by any equipment firm. I asked for the same information in several of the villages I visited, yet no equipment was ever shown to me. I do not have personal knowledge of the situations, so I can only speculate. I have been informed that many of the traditional transits and theodolites will no longer be manufactured after 1994. When the equipment is modernized this will force survey crews in Armenia immediately progress to use electronic equipment, which will take additional training and cost. The traditional upgrading of the present survey equipment in use would be to transits and theodolites with separate electronic measuring equipment.

In the City of Yerevan I examined a sample of the approximately 500,000 records in the files. These records are perfect for input into a computer based system of registration as are the land records in the villages. Land records are an intimate part of the surveying process.

Each agency conducting and supervising their own surveys. There is no single approach.

My evaluation of the survey profession indicated there is no nucleus of private surveyors to conduct any subsequent surveys after the State Acts have been granted. Nor did I notice uniform direction within the government agencies. There should be a unified approach, both in the private sector and the government sector for survey direction. The original survey that created the land parcel and identified it is as important as a new survey of a parcel that is to be sold. One creates the description and the corners and the second identifies and locates the original corners and lines. At this time there is a scarcity of Government surveyors to do just the original surveys and prepare the maps, and if a sizable number of private surveyors are needed they will probably come from this pool of professionals, which will inhibit the completion of the field surveys in a timely manner.

The boundaries that are being defined are shown on plats by distance measurements and limited references to natural boundaries (roads, streams, etc). In some cases calls for adjoining landowners are present. In the cities diagrams of the apartments or condominiums are drawn on the State Act, which represents the parcel to be conveyed. Separation of sleeping areas and other private areas are noted. This method was employed under the former governments, but in a practical free economy are unsuitable for a title registration system. The entire apartment or occupied area of the condominium should be described. Boundaries of apartments and condominiums are defined by spatial relationships or the walls and referenced to a street address or a "foot pad" of the land. Once the initial plan of the area is placed on record and recorded, then reference can be made the indexing system to define the property.

In an urban area when the parcel is a single family unit, not an apartment or condominium, the same basic survey principle applies as would apply to a rural area. The parcel should be identified by monuments placed on the ground at the corner positions and the lines between them defined by reference to distances and courses.

One can see the City of Yerevan has the best cartographic coverage so far as detailed maps are concerned. The maps available are limited in number for general use. Copies are not readily available. Each time I was shown a cadastral map, it was the topographic base quadrangle. There were no maps specifically delegated for cadastral use. Contours add very little on cadastral maps, in fact in some areas the contours may be a hindrance.

J. TASK 5 LONG TERM RECOMMENDATIONS

a. It is recommended all agencies which produce and maintain cartographic maps and/or aerial photographs make a complete inventory of what maps are available, their scales and dates of publication.

b. It is recommended all agencies which employ surveyors and office support staff identify and make an inventory of the numbers available, their expertise, all equipment available for use, and identify the training needs for them. and other expected needs.

A concentrated effort should be made to provide unified training in the cadastral area for surveyors and office staff. A continuing training program should be initiated to employ young people in training positions. This could include scholarships to universities, either in the Republic or foreign, for promising students to study cadastral management, including cadastral surveying.

c. It is recommended that the surveying practice in the minor urban areas (villages) and all individual parcels in the cities be expanded to include the placement of permanent monuments at all property corners and these corners be called for and identified in the Certificates of title. Only then will the parcels be permanently identified and placed with permanency.

This recommendation will be difficult to undertake. The U.N./FAO report, Annex 1, also encouraged this recommendation be adopted. The UN team recommended concrete monuments that would be made with the country and then distributed. My recommendation is in agreement with the UN/FAO suggestion, but I also recommend steel monuments that can be manufactured within the country with plastic caps that can be purchased. Annex 10.

In order to determine adequate cost figures, a test village should be selected and the procedure initiated providing the village with adequate surveys, monumentation and the preparation of the final certificates and maps. Accurate cost figures should be kept and then those officials in authority will better be able to make sound decisions.

This should include providing a computer for inserting survey data and for the preparation of the Certificates of Title (passports) for registration.

The office should be totally modernized. An estimated cost for this project would be approximately \$20,000- 40,000.

d. There is sufficient information now on record in the files of the Inventory Office of the City of Yerevan to meet the needs of having an adequate identification of apartments and condominiums, probably without having to do a large number of additional surveys. This will require that all urban descriptions be placed into computer data files and the present apartment plans be "scanned" with an electronic scanner or re-drawn using a CAD program. The City of Yerevan should be provided with possibly a minimum of 5-6 computers and a scanner. The records can be placed into a computer data base and made a matter of public record and filed according to the agreed system. Once this is accomplished then the original computerized record can be referred to either for the original State Act or in any subsequent transactions. All building "foot pads" will be numbered, this should make all computerization of these original records relatively easy. This is a labor intensive project and should be accomplished at a relatively reasonable cost. After a limited training

program on compute data entry, I would like to see at least four people assigned to a data input of the City of Yerevan records. Even though no Certificates of Title may be completed, it is important in the urban and city that the initial records be identified and placed into a data bank. After training a staff of at least four and possibly six people could be assigned the task of placing all of the Yerevan records into a data bank that will form the basis of the legal cadastre and can be used for the fiscal cadastre when the Certificates of Title are issued. An estimate of time and possible costs to accomplish this task is approximately \$100,000.

e. There are three categories of urban properties: apartments, condominiums and individual lots with and without dwellings. The least amount of trouble will be with the apartments and condominiums. This task will lend itself to a systematic identification of the parcels.

The most difficult category will be the individual parcels, in that requirements for surveys and corner monumentation will be the same as with all other individual parcels. Surveys will be required, monuments set at the parcel corners and descriptions must be prepared. These type of parcels do not lend themselves readily to a systematic type of surveying, even though this is the most efficient and cost effective. The survey crews assigned to this task will need additional training from that of conducting rural surveys. I do not see how a systematic survey of these parcels can be accomplished, but they will be surveyed on an as needed basis.

f. This consultant has repeatedly pointed out the necessity of providing a detailed, modern cartographic map base for the cadastre. Until an inventory is completed there are no positive records of the number of base maps available and at what scales. As was presented to this consultant, the maps are not available to other individuals or to lesser government bodies (villages). Since all I have knowledge of are the metal mounted base maps, these need to be adapted so that they can be reproduced and copies given to the various villages. I estimate there are approximately 5,000

topographic maps of various scales covering the Republic of Armenia. There are multiple different reproduction alternatives available to make the maps suitable for cadastral purposes.

A photographic specialist would visit Armenia. Using photographic equipment available in the Institute of Geodesy or equipment sent from the United States, a frame would be built to accommodate the metal mounted base maps. Using high quality film, each map would be photographed. The film would either be developed in Armenia or would be returned to America for developing. On the negatives or on a positive print made from the negatives, all contours would be deleted leaving only planimetric features. From these negatives mylar reproducible base maps would be produced and returned for use by the various Government agencies and the villages. Using either existing aerial photographs or newly flown aerial photographs aerial mosaics would be made of each map base and would be available for records and for pictorial purposes.

The estimated cost, exclusive of new aerial photographs, would be approximately \$300,000 and would take approximately 4 man years. ANNEX 12.

g. The UN/FAO report stated the Geodesy and Cartographic Institute, P 6 (11), is responsible for the creation of a geodetic network. This consultant visited this office and examined maps depicting the control established and found it to be quite concentrated in some areas but lacking in some of the remote areas.

Overall it should be considered as being suitable for cadastral purposes at this time and in the immediate future. The staff was quite knowledgeable and is capable of playing an important role in the base mapping. The basis of adequate precise maps is good horizontal and vertical control. Using this control this agency should be given adequate funds and staff to prepare orthophoto mosaic maps of those areas in which the cadastre is being conducted. Using the base maps and the supplemental control, and then rectifying available aerial photographs to the control and the base maps, aerial photo mosaics can be used for identifying base

data for taxation and for general cadastral purposes in the villages, and possibly in Yerevan. An estimate of producing these orthophoto maps would depend on the quality of the aerial photographs available and the quality of the base data information. Using Armenian staff with some foreign technical advisors to help supervise the project this could be accomplished possibly for \$250,000.

VI. SUPPLEMENTAL COMMENTS AND RECOMMENDATIONS

A. The success of the cadastre in the Republic of Armenia is dependent on many variable elements. Among these are

- (1) availability of capable, trained adequate staff
- (2) using past experiences and other nations experiences from which to learn
- (3) being open and willing to adopt new ideas (d) adequate financing
- (4) and support from the international community.

With these in mind I would like to make some recommendations that were not covered by the specific tasks.

B. COMMENTS

Comments relative to the five areas are:

Headed by the Cartographic Institute with its geodetic capabilities and including the field surveyors employed by the Inventory Bureau, Armgiprozem and the capable staff of the Yerevan Inventory Office I was very impressed with the professionals. I see no reason why the staff now available, with guidance and direction, will not be able to accomplish the task before them.

Armenia is isolated in its present situation. The isolation is not only political but it carries over to the professional areas, including surveying, mapping and cadastral activities. Expansion is needed so that the professionals who are responsible for any phase of the cadastre will be able to meet the needs of the 21st century and an expanding population.

In all my contacts with Armenian Government officials and employees I detected feelings of frustration and perhaps despair that it is impossible or

near impossible to get anything accomplished. This was brought home to me when I was given the list of needed equipment by Armgiprozem. They requested only the older types of equipment that was being employed, and did not feel they would be able to improve what they had. My detached and independent evaluation is that the Country is capable of far greater accomplishments than they think they can accomplish.

As the cadastral program becomes more mature adequate financing is a must. Until then loans, grants and other possible sources for equipment purchase, paying support staff and for the general management of the cadastral program must be found. At the present time some funding is available for the various agencies, but there are no surplus funds to provide for expansion of the program.

The Republic of Armenia is not unique in its professional isolation. Many of the former Eastern countries are having difficulties in relating, professionally, to the Western world. Decades of Soviet influence can not simply be cast aside in one or two years. The Soviets did have a high regard and did give excellent recognition to their professionals. Seeds must be planted to foster growth in these areas. This is what I would like to see in the cadastral and surveying areas.

C. RECOMMENDATIONS

These recommendations are made to supplement those already identified in the previous text. Several of which can be directly related to areas of comments.

(1) As previously stated the Republic must strive to attract young capable people to continue the cadastre that has been formulated and designed by the present professionals. It is a well thought out cadastral system. It must be maintained. All ministries have important parts to play in this cadastral system. All resources, both personnel wise and individual capabilities, from the Geodetic Institute to the Inventory Bureau of the City of Yerevan have responsibilities in the program.

The Geodetic Institute must make certain that all of the base maps are adequately controlled and drafted to standards that meet the cadastral needs. They have photogrammetric equipment that can produce aerial maps, aerial photo mosaics, and can provide the needed aerial photographs for use by the other ministries. This

report has stated before the entire foundation of a good cadastre is its base mapping. This Institute should be given adequate funding and staff and made a priority agency to receive resources.

I recommend the other ministries seek common guidelines and make plans for a unified approach to the cadastre. This is the time to do this.

(2) The Western professionals can learn as much from the professionals of Armenia as the Armenians can learn from the West. In my contacts with professionals in America I offer the following recommendations for consideration.

(a) Several of our cities and urban areas have initiated successful cadastral (GIS) systems. The City of Colorado Springs has offered to receive any visitors from Armenia to study their computer managed cadastral (GIS) program. I have examined this program and find it a modern, viable progressive program. I recommend a professional who is associated with the City of Yerevan cadastre be designated and arrangements be made with the City of Colorado Springs for a visit and training as to their cadastral program. This visit will provide an excellent opportunity to exchange ideas and for a learning experience.

(b) The University of Florida, Gainesville, Florida has an excellent program in cadastral studies and the Corpus Christi State University, Corpus Christi, Texas has a newly initiated program in cadastral studies. It is recommended several young professionals who are assigned to the cadastral program in Armenia be designated to receive additional studies at either of these two universities. Funds may be available through the United Nations to finance such a program.

(c) The Ministries of Armenia which are involved with the Cadastre should seek membership in Federation International Geographic (FIG). This international organization is composed of the professional societies of nearly 100 nations. Many of the former Soviet satellites have sought membership in

several of the various nine Commissions. Several of these commissions are directly involved with cadastral activities and land management. This international exposure will add great insight to those people who are guiding the Armenian cadastral program.

This same recommendation was made the UN\FAO study team that visited Armenia in June, 1994.

(d) One can understand why a feeling of frustration could be found with many of the professionals who are engaged in the cadastre. With a major job to be completed and with limited funds available the majority of the people I worked with had a difficult time seeing how the job can be accomplished in a reasonable period of time.

After serious reflections on the problems and after talking with the people involved I am certain they are up to completing the task. Although specific equipment was requested by Armgiprozem. It is now certain the majority of this request cannot be obtained because the equipment is no longer manufactured. The detailer would like to offer the following suggestions which may be considered as recommendations.

The only equipment available for general surveying are what the industry call "total stations." This equipment has both electronic angular measurements and electronic distance measurements combined in the same instrument. I do not believe the surveyors would feel comfortable making this major change in technology. Secondly if one element of the instrument ceases to work, then the entire instrument must be sent for repairs. I did not see any facilities available for repairs in Armenia. Based on these observations I recommend USAID or ICMA make an appeal to American surveyors for donations of out dated and surplus survey equipment for transport and use by Armenian surveyors.

In America most survey firms are now totally automated with total stations and they have abandoned their old transits, plane tables and theodolites. Working through the American Congress on Surveying and

Mapping and the various state surveying organizations, the detailer would seek donations from American surveyors of outdated surveying equipment. After making necessary repairs and adjustments the equipment would then be sent to Armenia for distribution and for use.

To do this would require ICMA, AID and the various Armenian ministries to work in unison for the common good. First assurances must be made that funds would be available for the necessary maintenance and repairs. Then arrangements must then be made for shipping this equipment, either by commercial carrier or by U.S support to Armenia. Then assurances must be made that this equipment would not be subject to Armenian duty or customs.

As past president of the American Congress on Surveying and Mapping, the detailer has made contacts to implement this suggestion. He did find an interest on the behalf of American surveyors to come to the aid of their fellow surveyors in Armenia. If successful, the requests for equipment can be met.

The amount of field surveying required in the villages and rural areas can be reduced and the process speeded up by employing some new technology in the cadastre. The use of Global Positioning Survey units (GPS) can effectively be used for positioning large and moderate size tracts or parcels. Annex 13.

While on his earlier TDY, the detailer made contacts with other Armenian ministries and several TDY specialists concerning their use of such GPS units. The present GPS units are portable (some hand held) and can locate positions within 1 meter or less. In cooperation with the Minister of Mines and Minerals, the Minister of Forests and other Ministers several of these units should be purchased for joint use. Training would be provided to all jointly. Each would contribute to the purchase of the necessary GPS units. These can be used to locate mapping control, mineral deposits, forest reserves, rights of ways, parcels of land and many other land uses.

An investment of \$200,000 should provide for

obtaining 12 to 15 of these units and to provide training for a nucleus of trained individuals.

(e) During visits to the Yerevan municipality records and several village offices, the consultant was shown the records of immovable property now being filed. Those records that were examined were found to be subject to destruction at any time from fire or water. This is totally unacceptable since the foundation of a cadastre is the use of these past records in assembling the new information.

RECOMMENDATION: Realizing that it will be very expensive to solve this problem, it is imperative that all offices in which records of immovable property are stored, they should place these records in fire proof storage. Also this information should be stored in data files in computers. It also would be possible to electronically scan this data for storage.

(f) While visiting the Minister of Agriculture the Consultant was informed that there were recent (1989) aerial photographs and maps available at Novocherrassr in Russia. These maps and photographs could be of much use in the cadastre. If these could be obtained they would identify land uses at or near the time of the establishment of the Republic.

RECOMMENDATION: It is recommended that someone, either the Consultant or some person qualified in aerial photo interpretation visit Novocherrassr in Russia to examine any and all aerial photographs available to determine the suitability for use in Armenia, especially the cadastre, and for other management purposes.

If they are suitable and usable, then arrangements should be made to obtain their purchase. Money should be made available to purchase the film and whatever copies of aerial photographs are available.

At the time of the visit in Russia the visitor should examine those maps and other aerial photographs available and determine if they are suitable for use in the cadastre or for other related activities by other Ministries.

VII EPILOG

Some people dream to be present at the birth of a cadastral system. To see the Republic of Armenia's cadastre flourish and grow would be a benefit to not only the Republic but to the entire free world.

Freedom to own land and to use land is a right recognized and given under both natural law and Christian law. One of the greatest joys a country can have is to see a land system that is living, viable, dynamic and one that is benefiting all of the citizens of the Republic.

The greatest joy a land owner can have is to know his labour, toil, and sweat is for his benefit and the land he develops is his own, to pass on to future generations.

I found a group of interested Armenian officials who, With patience, understanding, and a sense of dedication are capable of accomplishing the task and who will, with proper guidance make the Armenia cadastre one that can be held out as a credit to the entire world.

VIII SPECIAL APPRECIATION

When one leaves his native land to offer his technical and professional capabilities to a group of strangers, often one encounters difficulties because of differences of customs, language and backgrounds. The reception one receives is very important. I would like to extend my personal thanks and deep appreciation to two very special Armenian citizens. These two people made my stay in Armenia enjoyable and left me with a reluctance to leave and a sincere desire to return.

I would first like to thank Melik Karapetian, ICMA/USAID, for his kindness and being a right hand man when one was needed. He was always able to open a door or to meet a schedule. It is people like Melik who makes such assignments enjoyable.

Then last but not least my deepest thanks go to Nellie Malkhasian for her ability to use the right word, at the right time and in the correct language. Her translations kept this TDYer from having to eat many words and kept him from getting that age old travel

malady for which there is no known cure, the ability to put ones foot in ones mouth in several languages or "foot and mouth disease."

Walt Robillard

October 1994-February, 1995

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